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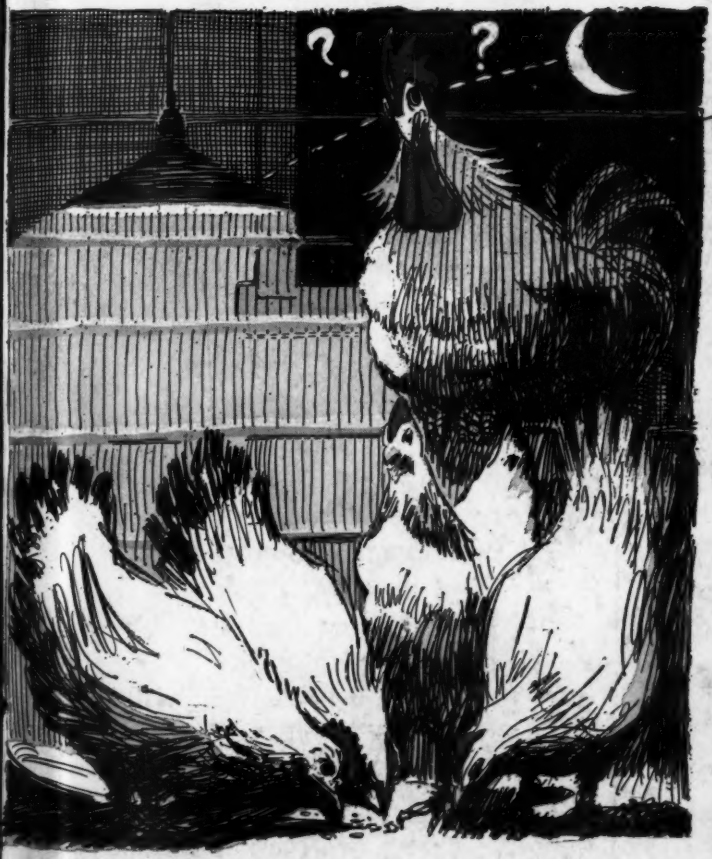
Electricity on the Farm

February 1928



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Electricity on the Farm

Vol. 1 FEBRUARY 1928 No. 8

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Announcing the New De Laval 50th Anniversary Separators

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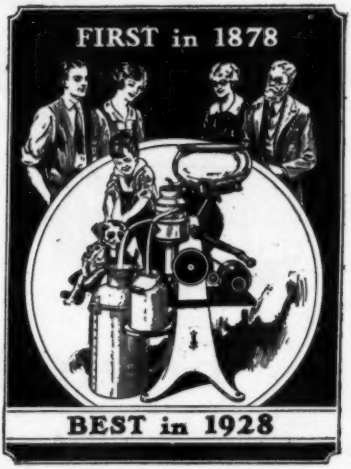

DR. DE LAVAL'S invention, in 1878, of the first continuous discharge centrifugal cream separator, was the foundation of modern dairying and has done more than any other one factor to develop the dairy industry into the largest and most profitable branch of agriculture.

First in the beginning, the De Laval has kept in the lead ever since. Practically every detail of separator construction has been De Laval originated. As De Laval features have been imitated, further De Laval improvements have been made. Four million De Laval machines have been sold the world over.

Now the 1928 "Golden Series" De Laval machines mark another step forward. In a word, they are the most complete, efficient and beautiful cream separators ever made. They are all that could be hoped for in such a machine. They must prove a source of pride as well as profit to every owner.

The best way to judge a new Golden Anniversary De Laval machine is to see one, and better still to try it side-by-side with any other separator, old or new. We do not believe anyone can do that and not choose the De Laval. See your De Laval Agent or write nearest office below for full information.

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A FAMILIAR scene—the lamp of welcome. But on half a million farms the same welcome is extended at the touch of an electric switch—with a flood of light both indoors and out.

The hours mother spent on the lamps belong to the family now. Properly shaded lights give the best illumination that science can devise.

Men appreciate electricity too, for it has eased many chores around the barn. The friendly light of electricity has revealed a new farm life with a hundred ways of doing things easier and better.

If you are on an electric line or hope to be soon, ask your electric power company for a copy of the G-E Farm Book which explains many uses for electricity on the farm.

This monogram on MAZDA lamps, Wiring Systems, and motors that run household and farm equipment, insures lasting safety and convenience in both house and barn. It is a guarantee of the endurance and adaptability that General Electric builds into all of its products.

GENERAL ELECTRIC

Electricity on the Farm

Vol. 1 FEBRUARY 1928 No. 8

Soon Time For Hatching The incubating and hatching season will soon be upon us. And Mrs. Hen will probably find that she will be needed in this work even less than she was during the past year. Incubators and brooders are being used on a larger scale each successive year. It is of particular interest to note the rapidly growing prominence of electric incubators, as well as brooders. Their good temperature regulation means less care, and results secured are superior to those from other types. They will increase in use!

Hitting the Nail on the Head In speaking before a convention of life insurance presidents in New York City recently, Matthew F. Sloan, one of the best informed and most progressive industrial leaders in America, said: "Perhaps some of you remember the farm of a generation ago with firewood to cut, water to haul from the well or creek, oil lamps and lanterns to clean and fill, and all the farm labor to be performed by animal and human muscle.

"That's the kind of farm life boys and girls took every desperate opportunity to get away from. It's a far cry from that to a farm with modern electric service—with an electric range, water pumped by electricity, home and barns and outbuildings electrically lighted, electric hay-hoists, milking machines, electric refrigeration for dairy and fruit storage, electric motors for general utility purposes. All that electricity has done for the city home and for the factory it is coming to do for the farm and the farm home."

Mr. Sloan hits the nail on the head in enumerating the reasons for the young peoples' desire to quit the farm. But what a difference on the modern electrified farm! No single development of recent years has done so much to develop contentment among the youth on farms as has rural electrification

Milk Cooling Building of Meadow View Farm; H. A. Hescock, one of the Owners, in Foreground (with shovel). Smaller White Building Immediately in Rear of Milk Cooling Building, Is Former Ice House.

Here's a Farm That Junked Its Ice House

A Whole Season's Ice Went With It, and It was Good Ice, Too

By S. M. BALLARD

WITH an ice house filled with pond ice which cost practically nothing, H. A. Hescock and E. C. Johnson, owners of Meadow View Farm near Westfield, Mass., have abandoned the use of ice in milk cooling and have adopted electric refrigeration for this phase of their dairy operation.

"The ice we were using was perfectly good ice too," says Mr. Hescock. "That is—it was as good as ice can be, but it wasn't good enough for our needs."

Like most farms in the eastern and central parts of the United States, Meadow View Farm has plenty of electric current available from nearby power lines.

So last March when the partners decided that ice was not doing their refrigerating job efficiently enough, it was a simple matter to have the electric refrigeration equipment installed and put into operation in their dairy barn.

"Of course, when we used ice we were able to get it at much less cost than if we had to buy it," Mr. Hescock ex-

plained. "Each winter we would fill our storage house with ice cut from a pond, so that our refrigeration was costing us nothing but the labor needed for cutting and storing it.

An Hour a Day Spent in Moving Ice

"Considering the cheapness of ice, it seemed a rather radical step to buy and install electric refrigeration. But we found that an hour a day was being spent in moving ice from the ice house to the dairy barn, washing it, and preparing it for use. Because our business is increasing rapidly, we need every working moment in caring for growing trade, and in the time spent in handling ice, we could sell fifty quarts of milk.

"Our milk cooling has always been done by placing the cans of milk in a large storage box. Ice used in this storage box was not giving cold enough temperatures, and this was another reason for getting electric refrigeration. Our output has been increased since our new refrigeration was installed, and we now handle 250 quarts more a day than we could with ice.

"Although our storage house was full of ice, we spent $572 for the electric refrigeration equipment which is now cooling our big refrigerator box. The new equipment has been operating since March, 1927, so I have had an opportunity to study its results and costs compared with ice.

"The cost of electric current for our equipment amounts to about a quarter of what ice would have cost had we purchased it."

Electric Refrigeration Economical

"But there are other factors even more important than a comparison of operating costs. We have an advantage over competitors, since our milk can be delivered to customers colder than other dairymen can deliver it when they use ice, due to lower temperatures at which the milk is chilled.

"I have been in the dairy business all my life, and have lived in this vicinity for 17 years. In that time, I have learned the importance of making my word a bond among the people I deal with. I have made them realize that my milk is just as good milk as I can give them. Electric refrigeration has meant a lot in helping me to make my word good among my customers.

Slows Up Bacteria Growth

"My milk is not pasteurized, but the cold temperatures given by electric refrigeration keep bacteria down. Just how efficiently this is being done was shown recently when the health authorities gave my milk a rating of 460 points, or 100 points better than the standard for legal milk."

Meadow View Farm has a herd of 50 cows, all Guernseys and Jerseys, and in addition handles milk produced by other herds. Practically all its output

is sold direct to consumers in Westfield.

"What did we do with the ice we had on hand when electric refrigeration was bought?" Mr. Hescock asked in return to a query. "Oh, we sold it to anyone who wanted it at wholesale prices. We haven't any use at all for ice around here now."

Savings and increases in business made possible by electric refrigeration will pay for the Meadow View Farm's installation within two years from the date of its purchase, Mr. Hescock estimates.

Mr. Hutchings Saves His Lambs

Up Near Coldwater, N. Y., there lives a progressive farmer who has found that electricity can serve

him in his work in innumerable ways.

He raises pedigreed sheep among other live stock and has found it excellent practice to light his sheep shed by electricity. During the lambing season quite a number of the ewes have twins and in the dark the ewes are very apt to find one and not the other of the lambs; frequently the missing one is found later beneath the mother, smothered. By burning the lights all night Mr. Hutchings has found that he practically eliminates this loss.

Hen House Wiring

In the accompanying picture you see a neat, but inexpensive, hen house wiring job. Note particularly the porcelain key sockets used for drop lights. These porcelain sockets prevent any possibility of a person getting a shock from the socket when operating the light, even though the ground is damp. Note also how each drop light is supported by a "rosette" mounted directly on roof joist. The wide angle reflector on each light gives wide distribution of illumination with greatest intensity right on the ground where it is most desired. This installation is on the Rock View Poultry Farm of Mr. Arthur Curry of Stanfordville, Duchess Co., N. Y.

Here's Neat Henhouse Wiring

A venerable Scot purchased a little radio set and a few days later his friends asked him how he liked it.

"Weel, it's aw richt to lisen to," he replied, "but those bulbs are nae so guid to read by."—*S. E. D. Bulletin.*

INDEXED

What About The Electric Hay Hoist?

By GEO. W. KABLE

HAYING time on the general farm is a time of maximum demand upon horses. The elimination of one or two horses during haying often means the saving of the investment, and the housing and feed for these horses for the entire year. In order to reduce this "peak load" on horse labor, electric hoists are coming into use in some localities for elevating hay into the mow.

There are a great variety of hoists on the market, but only a few of them are well adapted to farm use with electric motor drive. Until the system of handling hay is changed a satisfactory hay hoist must be suitable for use with the tracks, carriers, forks and other equipment now commonly installed in barns.

Hoists Tested

Tests of various types of single and double drum hoists have been under way at the Oregon Experiment Station for three years. The Oregon Committee on Electricity in Agriculture has interested itself in the problem and cooperated in the tests. The type of hoist which has proven most satisfactory has a single drum. Its operation is very simple. In using it the empty fork or sling is returned on the track by means of a weight at the end of the barn or it may be pulled back by hand. As a result of the tests, the following specifications for a motor driven hay hoist to fit the needs of the average farm have been drawn up and sent to manufacturers.

Specifications for Single Drum Hay Hoist

1. Should be simple.
2. Must be fairly reasonable in first cost.

Load

3. Average maximum working pull on rope or cable 500 pounds.
   Emergency pull of 2000 pounds.

Speed

4. Cable or rope speed 100 to 200 feet per minute.
   Speed of driving motor 1740 r.p.m. Drive pulley 4½ inches in diameter. Speed reduction to be provided in hoist.

Mounting

5. Hoist to be portable and suitable for mounting on skids. Might also be desirable to mount in inverted position on under side of mow floor.

Drum

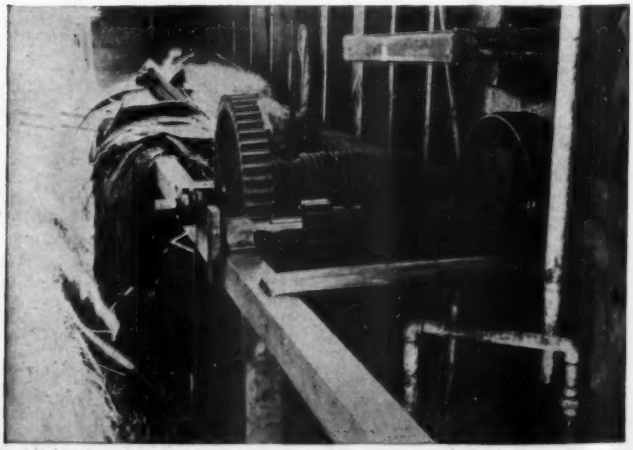
6. Diameter of drum to be not less than 6 inches and preferably 8 inches or more.
7. Size to be sufficient to hold 125 feet of 1 inch manila rope, 50 feet of which is to wind on drum in a single layer.
8. To run free from all gearing, etc., when clutch or drive gears are disengaged.

Control

9. Hoist to be provided with a good brake which will free drum automatically when released. Brake shoe or band to be easily replaceable when worn.
10. Drum movement may be controlled either by a clutch or friction device or by a disengaging gear or pawl. Disengaging device or clutch should be simple and durable.
11. It would be desirable, although not essential, to have the disengaging device or clutch and the brake both operated by the same lever, the drum to be thrown in gear by moving the lever in one direction from a neutral position and the brake to be applied by moving the lever in the opposite direction from the neutral position.
12. Provision for connecting motor direct to hoist would be desirable.

Several simple hoists of this

(*Continued on page 30*)



Home-Built Hoist on Farm of Wilbur Stillwell, Tillamook, Ore.

There's Certainly a Big Difference Between

Water Pails and Faucets

By V. B. MEACHAM

EVER since she was married my cousin Jane has walked fifty miles a year with a water pail in one hand. Rain or shine, under July suns and through January snows, she has plodded on in this never ending pilgrimage toward cleanliness.

We went out there for Thanksgiving last year and found a shining new sink in the kitchen.

"It's the thing I'm most thankful for this year," said Jane as we stood around and admired it. "When I think of the tons of water I've carted in and out every year, I feel like sitting down in front of it and turning both faucets on just to watch the water come in by itself.

Automatic System

"When the electric line came down our road, we made up our minds that we would have a water system the first thing. Of course we could have put an electric motor on our old pump jack, but we decided to get a complete system. There's a one horse motor on it, and it pumps water to all the buildings for less than Jim spends for tobacco in a month."

If they had not chosen the automatic system, that motor belted to a pump jack would have pumped the water into an overhead storage tank or into a pneumatic tank of some kind. From the first, the water flows to the faucets by gravity; from the second, by the pressure in the tank.

I believe that running water has a more revolutionary effect on the living standards of the home than lights themselves. It begins by making dish washing a quicker, more effective process, through plenty of water to change often and rinse thoroughly. It continues by upsetting half the routine of wash day.

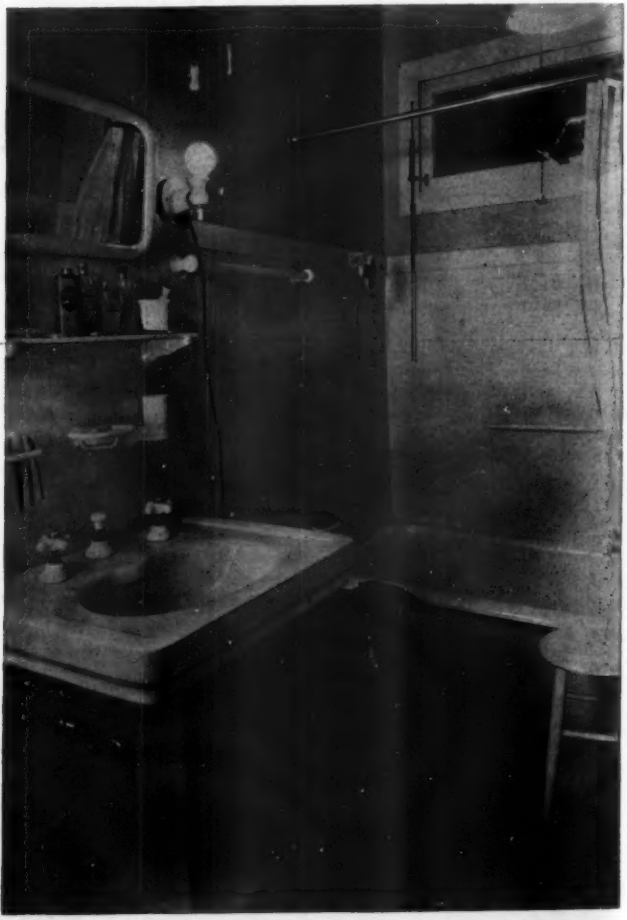
"Monday morning ain't what it used to be,
Ain't what it used to be.
"Monday morning ain't what it used to be,
Many long years ago,"

sang Jane's young daughter with flippant gaiety as she passed the corner where we had settled down for a good old

"I'm going to let the water do the running from now on."

fashioned gossip, and caught us beginning to talk about the washing.

"It certainly isn't," laughed her mother, giving her a loving pat. "Carrying in water for the washing, lugging out dirty water, lifting, stooping, so much of the work that attends the washing itself is banished. The clean water comes from the faucet, heated by our special



With This Bathroom Everybody's Baths do not Mean Extra Jobs for Mother

heater; the dirty water runs out the drain in my stationary tubs."

"But best of all," continued Jane, "the very best of all is the bathroom."

A Civilizing Agent

Then I remembered that I had recently heard a farm institute speaker say:

"The bathroom is the greatest civilizing agent in the world today."

I gasped a little when I heard it, but I've been pondering it a lot since. Allow for a little natural exaggeration; allow for a certain twisting of the idea to drive his point home, and there is a good deal of food for thought in what he says. I told Jane about it.

"Well, I don't know," she said thoughtfully. "It goes a long ways. Keeping clean is certainly a part of our civilization's creed, and keeping clean is a much simpler matter with a bathroom.

Makes Bathing Easy

"You've been here often enough. You know what Saturday night—or any other night one of the children decided to have a bath—was like. I had to build up the fire and put on a boiler of water, drag out a tub,—and make sure they remembered to pull the shades. When they were little, it seemed as though there was always a tub around somewhere ready to pop one of them in. Even now that they're older, everybody's bath meant an extra job for mother. I always had to go in and mop up, and drag the tub out when the last of this difficult rite of cleanliness was over.

"But now they can bathe any or every hour of the day; it's off my shoulders."

It is true that a built-in tub and a lavatory help to make cleanliness an easy habit to acquire. You want your children to be beautiful and handsome, of course. Well, cleanliness is next to prettiness in everybody's code.

It is perfectly possible to teach your daughters to keep themselves as dainty as rose leaves, and to persuade your sons to the scrubbed and shining cleanliness of the men in collar advertisements whatever the water supply,—but it is far easier to do it when bathing is not an ordeal but a luxury.

Better Sanitation

Modern plumbing strikes a blow for better sanitary conditions when it provides an absolutely safe method of sewage disposal in the septic tank. The danger of pollution to your water supply is removed.

When an electric motor does the pumping, backs and arms are free from one heavy job.

"I'm going to let the water do the running from now on," said Jane.

Candling Eggs in Daylight

Prior to the use of electric lights, candling, as the name would suggest, was done by candles, or kerosene lights. The comparative weakness of such lights made it necessary to do egg candling in dark rooms. But since electric current has come into use, and electric lights of high intensity are commonly employed, candling with modern equipment is now done even where daylight is present to a considerable extent. This simplifies egg candling tremendously and produces better results. Those poultry farms checking up on all eggs before they are sold report electric egg candlers as indispensable to their work.

Having Proven Themselves in the Western States

Electric Brooders Are Gaining Favor

By J. C. SCOTT

THE Pacific Coast States are the pioneers in the electric brooding field. Their problems have been fairly well solved and numerous brooders are now on the market which perform satisfactorily in that area. It must not be assumed, however, that these same brooders would prove satisfactory in the Minnesota or New Hampshire areas. Climatic conditions necessitate specially designed features. For the benefit of those unfamiliar with brooder design or brooder business, readers are referred to the California Experiment Station Bulletin No. 441, issued November, 1927. This is the only publication so far offered which treats these subjects as applied to brooders in a simple, yet true manner, and applies whether the brooder is to be used in California or New Hampshire.

Fully 6,000,000 chicks were brooded in Western Washington during the spring of 1927. Approximately 25% of them were brooded with electric brooders of one kind and another, and the indications are that for the spring of 1928 it will be nearer 50% than 25% brooded with electricity.

For several years after electric brooders came into use, they met with considerable unpopularity, because of the difficulty in keeping the floor under the hover dry, and also because of foul air or poor air circulation under the hover. This condition caused the chicks to be uncomfortable, sweaty and to crowd.

Many Things in Their Favor

Electric brooders had many things in their favor, yet it was apparent that they would have to be improved to provide first, a dry floor, and, second, fresh, warm air going to the chicks constantly.

Desiring to be of as much service as possible to its rural customers, the Puget Sound Power & Light Company, in cooperation with the Western Washington Experiment Station at Puyallup, Washington, developed the Electric Underheat Brooder, which very effectively does away with these objections to electric brooders.

Other electric brooders are now being manufactured in Western Washington which are successful in turning out strong, healthy chicks, also reducing much of the labor, fire hazards and cost of brooding. But each of these brooders has some particular arrangement whereby

Electric Underheat Brooder at the Western Washington Experiment Station, Puyallup, Washington. 1000 Chicks and Equipment for Their Comfort

plenty of warm, fresh air is constantly circulating through the chick chamber, supplying the chicks with fresh air, and keeping the floor dry.

What Users Say

The consensus of opinion among poultrymen who have used the modern electric brooders gives a very fair idea as to the practicability of raising chicks with these modern electric brooders.

"For my part, I wouldn't use anything but an electric underheat brooder," Mrs. Frank Wickersham, Route 3, Puyallup, Washington, told me recently. "It produces splendid chicks, with very little trouble. Last year was our first experience with it. We put 523 day old chicks under the electric underheat brooder and we now have 225 fine pullets. The cockerels were all sold for meat. When the pullets were seven months old they laid 14 dozen and 2 eggs per day, which is more than 75%.

"We are always advising everybody to use electricity because it is foolish to try to get along with unnecessary, hard labor."

Mr. Harry Beernink, a very successful poultryman at Lynden, Washington, used the new fresh air electric brooder last year to care for his 4,800 baby chicks. In talking with Mr. Beernink about the poultry business, he said:

"I like the fresh air electric brooder. It is absolutely satisfactory. The pullets are making a splendid record in their lay this fall.

"I am told that my bill for electricity is higher than that of many who have used these brooders, but, even so, it is cheaper than oil."

Electric Underheat Brooder in Operation on a Western Washington Poultry Farm — 500 Chick Size.

A fair comparison of coal brooders and the Mailwin Pure Air Electric Brooders was made last spring by Mr. R. E. Bonney, living at Alderwood Manor, Washington. In a statement regarding his experience, Mr. Bonney said:

Compares Coal and Electricity

"I found these chicks under the Pure Air electric came out much more sturdy and better developed, also developed much faster than those from under the coal stove brooder. I also found that I was able to separate all the cockerels while they were still under the heat, a thing I was never able to do before.

"There was also a marked difference in the chicks; those under the electric were even and well developed, while those under the coal brooder came out with the usual amount of poorly developed and uneven chicks. I attribute this to the special pure air device which supplies the much needed pure air all night while the chicks are asleep.

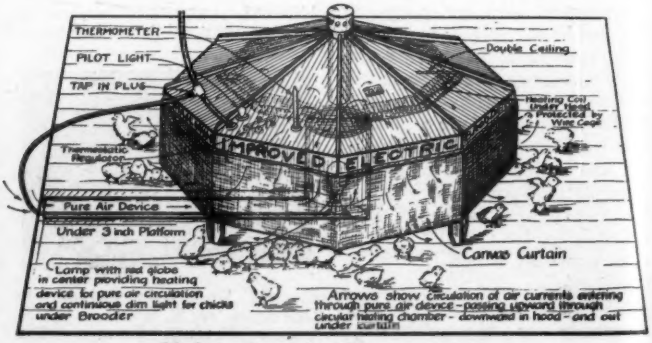
"I figure I spent at least 40 minutes each day caring for the coal stove and getting the chicks out of the hot room, while with the electric brooder I had nothing to do, as the heat is always uniform and needs no attention."

Different Types Preferred

Considerable difference of opinion regarding the kind and type of electric brooder best suited for their needs exists among poultrymen of Western Washington. Mr. John Fulton, of Centralia, who has been in the poultry business for many years and has used many different kinds and types of brooders, recently said:

"You couldn't give me anything but an electric brooder. In the spring of 1927 I put 1,200 chicks under my electric brooders and lost only 9. But to get such results with the old-style round brooder, which I like best, you have to turn on plenty of heat and raise the hover, so all chicks get all the fresh air they want.

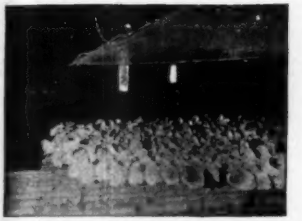
"I leave a 25 watt light on the baby chicks all night, so they can see to get around and come out to eat or drink any time during the night."


THERMOMETER
PILOT LIGHT
TAP IN PLUG
Double Ceiling
Heating Coil Under Hood Protected by Wire Cage
IMPROVED ELECTRIC
Thermostatic Regulator
Pure Air Device
Under 3 inch Platform
Canvas Curtain
Lamp with red globe in center providing heating device for pure air circulation and continuous dim light for chicks under Brooder
Arrows show circulation of air currents entering through pure air device - passing upward through circular heating chamber - downward in hood - and out under curtain

Mailwin Pure Air Electric Brooder

Some Interesting Figures

Very complete data kept during the past brooding season was kept and compiled by M. G. Cushing, resident manager of the Puget Sound Power & Light Company at Puyallup, Washington. It was found that the average cost for electric current, in that territory, to bring one chick through the brooding season (average 6 weeks for each chick) was 2.1 cents.



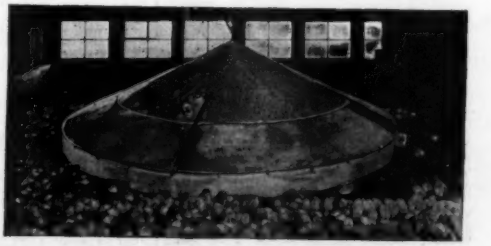
Teaching the chicks to roost under the Electric Brooder: When the chicks are about five weeks old, small roosts can be placed under the hover and the hover raised gradually until the chicks are taught to sit on the roosts. Then the hover may be removed permanently by drawing it to the ceiling, and the roosting of the chicks is permanent.

For the purpose of finding cost of brooding one chick, 68 poultrymen, 121 electric brooders of all makes, and 69,500 chicks were considered; 70,675 kilowatt hours were required to brood the 69,500 chicks, which is approximately 1 kilowatt hour per chick. The time of brooding was over a period of about six months, from January to July. The cost to brood each chick for some poultrymen was more than 3 cents, while with others it was less than one cent.

Average Cost of Chicks

Mr. George Barber, sales manager, Puget Sound Power & Light Company, at Bellingham, Washington, upon his study of the exact power bills of those who used only one type of electric brooders in the Bellingham and Lynden territory, found that the average cost for current to brood one chick for the entire season was 1.94c, considering 24 poultry farms and 45,400 chicks. No connecting and disconnecting fee is charged in this district. In this case again the cost ranged from less than one cent to more than three cents for different poultrymen to brood one chick. It required 40,173 kilowatt hours to brood the 45,400 chicks in this instance, or a little less than 1 kilowatt hour per chick.

A splendid record regarding the cost of brooding chicks by



Fresh Air Electric Brooder

Fresh air intake on each side of the hover with electric heating element arranged in the intake in such a way as to cause a continuous circulation of warmed air going to the chicks and passing out under the curtain.

Electric Brooder Data for Puyallup, Washington

(All makes of electric brooders considered)

Reg. No.	Name	No.	Size watts	No. chicks	K.W.H.	Demand	Rate	Rev.	Days
7-85-1	G. W. Webb	1	1,000	500	1,077	1.0	.0192	$20.77	58
6-300-1	A. R. Letourneau	1	750	500	580	0.75	.0239	13.71	60
28-580-1	Geo. L. Custer	2	660	1,000	235	1.06	.05	11.65	4
6-250-1	E. W. Vining	2	750	1,000	1,328	1.20	.0189	25.12	55
9-600-1	O. Sivertson	1	750	500	356	0.75	.0303	10.80	48
28-726-1	Geo. J. Fogarty	1	1,000	500	572	1.00	.022	12.92	39
28-1525-1	Henry Heck	1	750	500	247	0.75	.035	8.89	60
8-529-1	Geo. J. Jones	3	500	1,500	1,753	1.50	.0161	28.30	92
28-1453-1	R. V. Hanicker	2	735	1,000	779	1.176	.0215	16.75	47
8-415-1	J. Hammermeister	2	750	1,000	631	1.20	.....	16.56	52
28-686-1	James Yazzolino	1	1,100	500	584	1.10	.027	15.63	41
8-709-1	Lew Jenkins	1	800	500	300	0.80	.035	10.76	50
2-893-2	A. R. Brown	1	1,200	1,000	1,481	1.20	.028	37.85	90
8-883-3	E. C. Cross	2	660	500	558	1.06	.026	14.82	52
6-639-1	Earl Simpson	1	800	500	454	0.80	.029	13.21	43
2-349-1	Chas. Johnson	1	800	500	378	0.80	.028	10.81	42
9-146-1	Roy Keeler	2	750	1,000	1,579	1.20	.145	22.99	44
8-743-1	Ole Frisk	1	750	500	103	0.75	.058	6.06	39
7-745-1	Arthur H. Frost	1	1,000	1,000	804	1.00	.0224	18.04	33
4-34-1	G. A. Gustafson	1	750	600	341	0.75	.029	10.12	30
5-723-1	Arthur Erickson	3	800	1,500	1,753	2.00	.023	40.35	94
3-713-1	Mrs. W. S. Hoss	1	1,080	500	696	1.08	.025	17.52	57
9-587-1	Alfred Berb	1	1,000	500	414	1.00	.027	11.20	35
9-220-1	Henry Scheyer	1	1,000	1,000	1,586	1.00	.016	25.41	49
9-608-1	Hans Mickelson	2	750	1,000	1,256	1.20	.0165	20.74	36
6-1675-1	W. B. Jones	3	850	1,500	1,701	1.91	.0196	33.39	58
7-277-1	Fred Snellstrom	2	660	1,000	1,144	1.06	.0226	25.84	82
1-100-1	Mrs. J. P. Brislin	2	660	1,000	1,835	1.06	.0169	32.10	79
9-593-1	Oscar Juul	2	1,000	500	536	1.60	.0263	14.13	81
7-708-1	A. Lundin	3	660	1,500	445	1.49	.034	15.16	48
6-336-1	A. R. Hartman	1	1,000	500	662	1.0	.022	18.00	41
8-869-1	E. E. Gaines	2	750	1,000	1,224	1.2	.0268	33.00	117
3-850-1	J. Lounhardt	1	750	500	1,188	0.75	.016	19.23	57
28-1470-1	Gust Hendrickson	1	750	500	491	0.75	0.258	12.57	54
7-811-2	Chas. Erickson	1	750	500	575	0.75	.0239	13.66	55
9-598-4	Turner Crawford	2	660	2,000	2,026	1.06	.0158	32.05	44
8-618-1	P. B. Rowley	3	1,200	3,000	3,032	2.70	.0205	62.23	94
2-923-1	A. Carstensen	2	800	1,000	517	1.28	.034	14.52	70
9-173-1	A. C. Anderson	2	1,000	1,000	750	1.60	.026	19.58	59
7-801-1	G. E. Morrison	2	660	1,000	580	1.06	.027	15.80	59
8-124-1	W. H. Wainwright	3	750	1,500	1,179	1.68	.0239	28.20	67
4-26-1	Myrtle C. Barry	2	660	1,000	1,207	1.06	.018	22.64	61
8-601-1	J. C. Vining	2	750	2,000	2,155	1.20	.0147	42.07	85
8-411-1	C. W. Grayum	2	750	1,000	843	1.20	.0239	20.11	62
9-696-1	O. Steelberg	2	1,200	2,000	2,029	1.92	.0148	34.01	49
2-310-1	Mrs. A. H. Spencer	2	750	1,000	1,230	1.50	.021	25.90	31
9-389-1	Glenn O. Eppley	2	800	2,000	1,747	1.28	.019	37.80	113
7-815-1	Carl Jonas	3	800	1,500	767	1.80	.0256	19.68	68
6-170-1	Chas. Lenz	1	800	500	629	0.80	.0237	14.89	65
7-280-2	Lucile Bonaguidi	2	600	1,000	920	1.06	.0200	18.75	66
8-113-1	Steve Duris	2	660	1,000	406	1.06	.035	14.56	77
5-232-1	Emile Ehlke	2	800	1,500	1,048	1.28	.028	29.30	110
28-1224-1	C. R. Johnson	1	800	500	1,078	0.80	.019	19.46	61
9-691-1	D. H. Hoskins	3	750	1,500	1,564	1.68	.0182	28.54	50
3-514-1	Della Hamisch	2	660	1,000	562	1.05	.0218	14.89	51
9-253-1	J. H. Keel	3	750	1,500	1,168	1.68	.020	24.10	50
4-614-1	Bonne Willmott	2	750	1,000	687	1.20	.023	15.95	51
2-359-1	J. H. Gudd	1	1,000	1,000	1,073	1.00	.0203	21.77	56
28-688-1	Joseph C. Netnin	3	600	3,000	3,293	1.35	.0158	52.12	103
5-464-1	Frank Rathewohl	1	750	500	724	0.75	.023	17.24	69
9-586-1	W. L. Hestness	2	750	1,000	1,525	1.20	.0174	26.64	61
9-130-1	Oscar Sedergren	1	750	500	432	0.75	.0299	12.93	64
3-34-1	G. A. Gustafson	2	750	1,500	1,526	1.20	.0177	21.45	48
9-190-1	F. D. Metcalf	1	750	500	224	0.75	.048	10.85	64
9-175-1	E. Walin	2	800	1,000	739	1.28	.026	19.35	63
8-675-1	Geo. Bushell	1	750	500	893	0.75	.0172	15.37	38
9-614-1	C. J. Ostrom	2	750	1,000	1,465	1.20	.0167	24.51	48
8-726-1	F. W. Gross	1	750	500	486	0.75	.03	14.76	103
4-592-1	J. C. McDonald	3	750	1,500	1,548	1.68	.019	30.24	55
		121		69,500	70,675			$1,450.32	

"You couldn't give me anything but an electric brooder," says John Fulton of Centralia who has been in the poultry business for many years.

electricity comes to our attention from W. J. Bennett, living in the city limits of Centralia, who, in the spring of 1927, brooded 2,100 chicks in four electric underheat brooders,—the total bill for brooding being $19.60.

Produces Better Chicks

Brooding with modern electric brooders produces much better chicks, a more evenly developed flock, reduces the labor, care and attention when the chicks are small, cuts the fire hazard to nearly zero (depending on proper wiring), and in most cases the cost of current is less than fuel costs.

(EDITOR'S NOTE: One large manufacturer of electric brooders, the Wellington J. Smith Co. of Cleveland, Ohio, reports excellent results with their product in the colder states as well as in the warmer. Another interesting article on this subject from a different section of the country will appear in an early issue.)

Electrified Milk Room

By M. W. NIXON

When Mr. B. N. Millard of Inlet Valley Farm installed this bottle filler and capper, he found it simplified this operation very much with a consequent reduction in labor required. In fact, it saved about three hours every day on the 40 cow farm. Furthermore, it is easy to keep clean and costs but a few cents a day to run.

In this same milk room there is a cooler over which the milk is run by the small pump. The larger pump is used to circulate ice water through the cooler pipes. Both are driven through the line shaft by the one horse power motor on the ceiling. On the whole, this is the cleanest, most dependable, and cheapest form of power that can be used in the dairy business.

Mr. Millard is employing the services of three one horse power motors in his dairy.

Upper: Overhead Motor Driving Milk and Water Pumps Through Line Shaft, at Inlet Valley Farm. Lower: Milk Bottle Filling at Same Farm.

Starting Cheese by Electricity

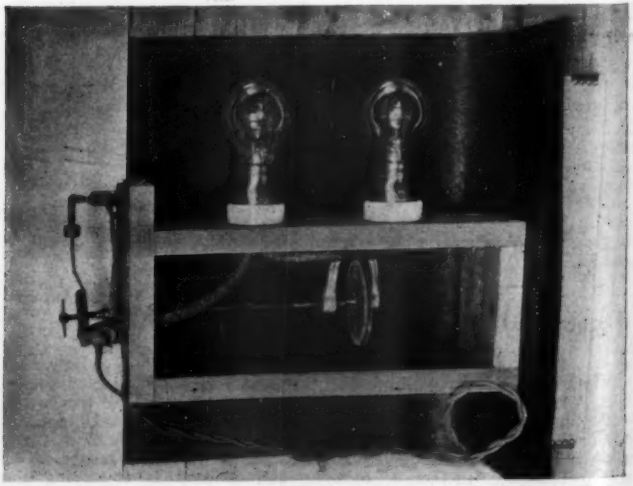
By GEO. W. KABLE

Tillamook cheese is now being started on its process of manufacture by electricity. Whether the electricity will add any vitamins or extra food value to the cheese is not the question in this case. It is a matter of efficiency and certainty in being able to produce a good "starter" under controlled conditions.

In the process of cheese manufacture a culture known as a "starter" is used. It is something like the batter mother used to place behind the base burner during buckwheat cake season in the winter. The cheese starter needs to be incubated, and to make a good starter the incubation temperature should be held at about 70 degrees. Ordinarily a warm room is depended upon for the heat but with uncertain results.

Last winter V. D. Chappell, Professor of Dairy Manufactures, suggested to Oregon cheese makers that they install heaters designed at the Experiment Station for holding the starter temperature constant. This heating unit is placed in an insulated box or old refrigerator of sufficient size to hold the can of starter. The heating unit is made up of boards supporting receptacles for two electric lamps which furnish the heat, and an ether wafer incubator thermostat to regulate the temperature. Lamps of different wattages may be used in the receptacles, but one 50 watt lamp will usually be adequate. The device is simple and may be plugged into any lighting service. After several months of trial a number of factories are now using the electric incubator with very gratifying results.

"Wife Saving Station" is the name of a shop in Vincennes, Ind., where electrical appliances for the home are sold.



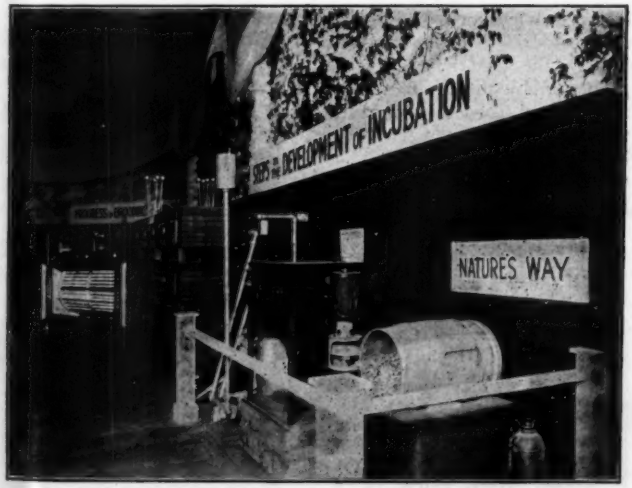
Cheese Starter Incubator Heater Made for V. D. Chappell, Dairy Department.

Shows Progress in Poultry Raising

At the Eastern States Exposition held in Boston recently a very interesting display was made showing the progress in hatching chickens from the older to the latest method. As illustrated in the picture herewith, the old straw filled barrel was the first step; then came the oil stove heated apparatus; then the hot water heater, and finally the electric incubator. The latter machine shown in the display is of the well known Petersime design. Poultry raising is keeping well apace with the times, and the advent of the electrically operated incubators and brooders is saving a lot of time for poultrymen in addition to producing better birds.

Cooling Milk

Milk should be removed from the stable immediately after milking, and not poured directly into cans standing behind the cows. Cooling the milk after milking improves the flavor and checks the growth of any bacteria that may be present. Cold water will cool the milk about 30 times faster than the air. Cooling tanks attached to electrical refrigerators make up the ideal cooling apparatus for dairy farms. Warm milk, fresh from the cow, should be cooled at once to about 50 degrees Fahr. and kept at this temperature until delivered to the customer.



Poultry Raising Exhibit At Boston

QUESTIONS AND ANSWERS

Using Electric Iron

Question: In reading through various magazines I have noticed from time to time, the statement that electric irons will cause fires if left standing on an ironing board with current turned on. Is this correct? If so, why does not the cloth on the board burst into flame when the iron is passed over it?

Answer: Electric irons when placed on the cloth cover on an ironing board and left with the current turned on will cause flame to burst forth in from 20 to 30 minutes. You question as to why ignition is not started instantly when an iron is being used. Here is the reason: Within the iron heat is being generated by the flow of electric current through the resistance, or heating element. So long as the heat which is generated is carried away as fast as it is created either by the air or absorbed by the materials being ironed, there is no danger of flame. On the other hand, when the iron is permitted to stand at one spot on the board without the protection of an iron stand, heat continues to be generated and as the one spot on the board cannot absorb the heat as fast as it is generated, the temperature begins to rise and continues rising until flame bursts forth. When the iron is passed back and forth over materials being ironed, the lower temperature of these materials cause heat to flow from the heated surface of the iron and in this manner keep the temperature down. It is only when the iron is permitted to remain at one place on the board that the temperature builds up to a dangerous point.

Motor for Hay Baler

Question: What size motor is used for operating a hay baler?

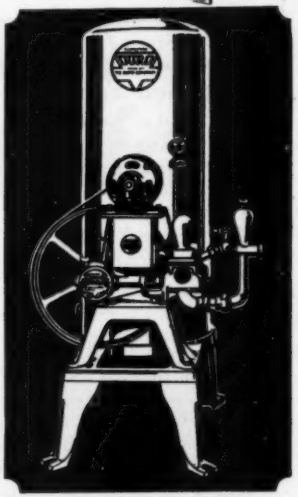
Answer: This depends entirely upon the size of the baler. The smallest baler on the market at the present time uses a 3 H.P. motor while balers have been built using 25 H.P. motors. A motor of 7 or 8 H.P. seems to be the most commonly employed for this work.

Readers of "Electricity on the Farm" are invited to submit questions for answering in the columns of this magazine. Questions should be confined to electrical subjects and be addressed to "Questions and Answers Department, Electricity on the Farm, 225 West 34th Street, New York, N. Y."

COMPLETE Water Service

~Buy it Once and for All!

A complete private water-works that gives you the equivalent of city water supply—that is the Duro Water System. Starting and stopping automatically, without care or attention, it gives you water under pressure at every faucet—in kitchen, bathroom, barn or yard. Only such service as this *will satisfy you permanently.* Only such service brings the comfort that running water means. Duro homes enjoy inside sanitary toilets, shower baths, lighter tasks, quicker chores, protection against fires, greater cleanliness, water for the garden and many other things that actually save money while they add to the comfort of every member of the family.



Automatic Vertitank System, made in sizes for small, medium and large homes. Capacities 200 to 400 gal. per hour. Cost of operation 10c per 1,000 gal. with current at 10c per Kw hour.

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Duro sells you not just a piece of mechanism, but satisfactory water service *and sees that you get it.* Duro products are built by the largest makers of private water systems in the world. There are Duro pumps for all sizes of houses and all depths of wells. Experience qualifies us to recommend exactly the system that will serve you best and most economically. Duro representatives are factory-trained.

Genuine Duro Automatic Electric Water Systems, fully guaranteed, sell for

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Liberal payment plan makes it easy to own a Duro. You owe it to yourself, to your family, to learn all about the Duro proposition today.

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Radio Notes

Radio Popular on Electrified Farms

Due to the presence of a source of electrical supply, radio sets have become very popular on electrified farms. Whether batteries or eliminators, or even the new A. C. tubes, are used, the story is the same—there is no chasing to town to get batteries charged every few days. Now it is only a matter of providing the proper equipment and the batteries are charged directly from the household current. As radio sets equipped with A. C. tubes become more popular and more perfected, the farmer with central station service can keep pace with the city resident in having the latest in the way of radio receiving apparatus.

Farmers Respond to Radio

A short time ago one of the announcers of Radio Station WGY of the General Electric Company, Schenectady, N. Y., broadcast an article contained in the October issue of ELECTRICITY ON THE FARM. This article appeared on page 21 and was entitled "Western Poultryman Has Labor Saving Plant." That the story was well received may be judged from the great number of listeners who requested copies of this number of the magazine. These requests came from the following states: New York, New Jersey, Ohio, Pennsylvania, Vermont, New Hampshire, Massachusetts, Ontario (Canada) and California.

Broadcasting of motion pictures is predicted within five years.

Have Your Doubtful Tubes Tested

Vacuum tubes, like living things, grow old and finally come to the end of their existence. Formerly, when vacuum tubes had solid tungsten filaments, a tube was useful until the filament would no longer light. Today, however, economical vacuum tubes employ special filaments which continue to light even after the tube has become practically useless. So a lighted tube is no proof that the tube is still good.

Progressive radio dealers have tube testers with which to determine the characteristics of tubes. When possible, the radio enthusiast should have doubtful tubes tested by his radio dealer. Often the best types of tubes can be rejuvenated or reactivated as it is called, so as to deliver several hundred hours of additional service.

To the radio listener in rural sections where a local radio dealer is a rarity, there is a simple home made means for testing the efficiency of tubes. This involves nothing more than mere comparison between a tube of highest efficiency and the tube in the receiving set.

First of all, the radio owner should secure a new tube from a reliable dealer. This tube is now substituted for one tube after the other in the receiving set, noting the difference in signal strength and tonal quality. In this manner the listener can tell which tubes are getting weak, causing a loss in signal strength and even impairing the tonal quality, by direct comparison.

Reliable vacuum tubes have a life well in excess of a thousand service hours. Furthermore, while efficient tubes should be employed for the audio amplifier sockets, the older tubes can be used with good results for the radio frequency and detector sockets.

Enjoy the New Thrill of ELECTRIFIED Radio

If you have electric light (A. C. 60-cycle current) you can have ***better radio reception*** on your present set, by using Majestic electric radio power units. Use the same tubes now in your set — no changes needed.

Majestic

BRINGS Your Old RADIO SET up to 1928 Convenience and Performance

Gives you permanent, full strength "A" and "B" power from your light socket. Majestic Power Units are real 100% electric units, requiring

No { **Acids** / **Liquids** / **Batteries** / **Chargers** / **Attention** }

Just hook Majestics in and you immediately *electrify* your radio set — no matter what make.

Banish forever all the annoyance and expense of buying new "B" batteries, recharging your "A" battery, constantly changing wires around, etc. Majestics are hooked up in a few moments — and you have permanent power ***from that time on.*** You'll be amazed at the way Majestics improve your reception and add to distance getting. Send coupon ***today*** for "What They Say About Majestic," folder and name of dealer who will give you "A Majestic Demonstration," all free, no obligation.

Grigsby-Grunow-Hinds Co.

Largest Manufacturers of Electric Power Units for Radio Sets in the World

4540 Armitage Avenue, Chicago, Illinois

Scissors Here

GRIGSBY-GRUNOW-HINDS CO., 4598 Armitage Ave., Chicago, Ill.

Gentlemen: Please send me details of how I can electrify my radio set with Majestic Electric Power Units, also other information free.

If you are a Radio, Music, Hardware or General Merchant, write "Dealer" after your Company name and mail coupon for our big-profit, quick-turnover proposition.

My set is a..... .....
Name of Set No. of Tubes

.....
Name

.....
Address

Household Hints

Some Timely and Interesting Suggestions of Value to the Farm Housewife.

Quick Soups

By STELLA ELIZABETH DELAND

This is the season for soups. They are very delicious and wholesome and, if you choose the kind you can make without very much trouble, your menu will be enhanced a thousandfold. Here are recipes for some that I have tested on my own electric range or grill.

Corn Chowder

This soup can be made from left-over fresh corn or canned corn. Take about one ounce of salt pork, cut in tiny dices and put into a saucepan over "high" heat on the heater top of your electric range or grill. When it is rendered about half way add two tablespoonfuls of finely chopped onion and one teaspoonful of parsley and season with salt, pepper and paprika. Meanwhile simmer two cupfuls of corn in two cupfuls of water for about ten minutes. Then add to this three cupfuls of milk, the onion, parsley and salt pork, and let simmer for about five minutes.

Creamed Squash Soup

Steam one large squash, put it through the sieve. Meanwhile scald one quart of milk with one teaspoonful of finely chopped onion. Remove onion and add to the squash. Melt two tablespoonfuls of butter in a saucepan, stir into it two of flour and add the squash, stirring until it begins to thicken. Season with pepper, quarter teaspoonful of celery salt and little paprika.

String Bean Soup

Cook one pound of string beans from which the strings have been removed and one small onion in one quart of salted water. Cut in dices two ounces of bacon or salt pork and fry. Remove the bacon or pork, stir two tablespoonfuls of flour into it, and add the bean water. Stir until it begins to thicken, then add the beans, bacon and season with little pepper and paprika, and salt if it needs it.

Your Electric Heaters

By SALLY E. DAVIDSON

At this time of the year, when the snow has come and the mornings and evenings are cold, one's thoughts naturally turn to "homey" comforts such as open fires of evenings. A grate fire at least takes care of the evenings in the living room, but how about the cold bathroom of mornings? The answer — a small, inexpensive, portable electric heater.

In our house we have three of these electric radiant heaters and they have proved invaluable.

Write for 32 Page FREE CATALOG

Free planning service. Easy terms if you wish.

National

FRESH WATER SYSTEM

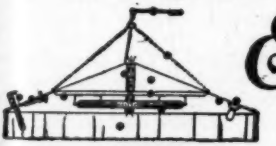
THE National electric-driven Fresh Water System draws fresh water instantly from any number of faucets—10 to 20 gallons a minute, pumped direct from well against any lift up to 150 feet. Soft or hard water, pumped from two or more sources by only one system—from well, cistern, lake or stream.

Water in abundance for drinking, household use, laundry, lawn and garden. No noisy, clanking pump rods; no water storage tank. The National stores air only. Nothing to freeze in Winter—no warm, stagnant water in Summer.

Install anywhere—in barn, basement, unheated garage. Exclusive, patented sleeve-valve air compressor permits continuous emergency operation hour after hour. Simple, and so quiet you can hardly hear it.

NATIONAL UTILITIES CORP.
Subsidiary of National Brake & Electric Co., Division of Westinghouse Air Brake Co.
327 Belleview Place, Milwaukee, Wis.

Poultrymen Are Buying



SMITH BROS.

Electric Brooder

LOW PRICES—BIG VALUE

24 in. (100 chicks)	$12.00
32 in. (200 chicks)	16.00
42 in. (350 chicks)	20.00
56 in. (600 chicks)	24.00
72 in. (1000 chicks)	36.00

BECAUSE

It's the easiest, safest, simplest brooder yet designed. Needs no attention; once started it automatically regulates itself. Maintains the desired temperature day or night without any attention. No fire hazard; no worries; no fueling; no dust or ashes. It is clean, sanitary and safe.

Write for complete circular—It's FREE

Information on wattage, current consumption and installation will gladly be sent to those who make request.

Electricity is only as useful as you make it. If you intend brooding chicks—do it electrically. Install a Smith Brothers' Electric Brooder or as many as are needed and "push the button." You will wonder why you didn't do so before.

WELLINGTON J. SMITH COMPANY
600 DAVIS-FARLEY BLDG. CLEVELAND, OHIO
Exclusive Sales Agents for Petersime Electric Incubators

It is not at all an uncommon sight, during the cold mornings, to see any one of us going from one room to another carrying the heater along. Just another of the portable heater's advantages. Truly a comfort one can enjoy anywhere there is an electric convenience outlet.

Its Lasting Qualities

If properly taken care of, these heaters will last indefinitely. Keep the copper reflector bowls free of dust and shining clean, and they will always reflect the maximum of heat. Dust on the reflectors absorbs the heat and consequently cuts down the efficiency of the heater and wastes electric current.

If eventually you find yourself with a burnt-out heating element, do not shelve the heater, because this element can be easily replaced, indeed as easily as an electric light bulb. That is, you can buy one in almost any electric store, unscrew the old and replace the new element and the heater is ready to go on giving service.

What About the Electric Hay Hoist?

(*Continued from page* 12)

type have been in use in Oregon for a number of years. One on the farm of Wilbur Stillwell of Tillamook is operated by a 2-h.p. milking machine motor. Slings are used on the hay rack and the load is taken off in three lifts. Two men working alone moved away hay with this simple equipment at the rate of 12½ minutes per load. The average weight of each loaded sling was 860 pounds and the cost for power at 10 cents per kilowatt hour was about 1.1 cents per ton.

Such a hoist finds other uses on the farm also. One of a similar type operated by a 2-h.p. motor on another farm was used in digging an irrigation well. The well was 7 ft. x 9 ft. and 22 ft. deep. The first six feet of earth were thrown out with shovels and the hoist used in removing the remaining 16 feet. The volume of earth elevated was 37.3 cu. yds. and the total amount of power used 39 kilowatt hours.

Electric Hoist Preferred

Farm hands nearly all prefer the electric hoist to horses. The average man can operate the hoist without difficulty and the crew gets into the swing of operations just as quickly or a little quicker than when using horses. The hoist has an advantage over the horse in that the fork may be stopped just before it hits the load on the return pull. This gives the man on the load an opportunity to straighten the ropes and swing the fork into position for sticking without lifting it. Ropes from the controls of the hoist may also be carried to the load and the entire unloading operation performed by the driver with a saving of an extra man.

Cows should be supplied with pure water and not have access to stagnant pools because of the unsanitary conditions of such a water supply. It is well to clean watering troughs regularly and to keep them in good repair. Fresh water should be supplied daily—and oftener if convenient.

RUNNING WATER IN EVERY AMERICAN HOME

Easing Up on the Chores

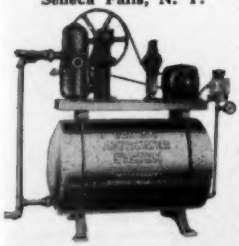
It's the pumping and hauling of water that makes hard work of watering the stock, cleaning milking utensils, and other chores. With a Goulds Autowater System, when you want water, all you do is turn a faucet.

An Autowater System on Easy Terms

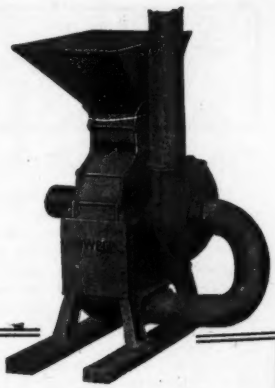
Outfit X-210, below, ready for immediate connection to house wiring and water source, for only $125.00, on easy payment terms. Capacity, 210 gallons per hour. Equipped with the famous Goulds Vertical Pump.

Ask your local power company for information about Goulds Autowater Systems—or write direct to us for Autowater Catalog 15 EF.

Goulds Pumps, Inc.,
Seneca Falls, N. Y.



GOULDS PUMPS



Another Job for the Power Line!

Now, with electric power, you can grind feed automatically, with the wonderfully efficient Rowell "Whip-it" Hammer-Mill. A 3 to 5 H.P. motor runs it and will grind 18 to 35 bushels of grain per hour, according to the condition of the grain and the kind of grain you are grinding.

Here is one feed grinder that works without stone or steel burrs. It grinds with ***hammers!*** It literally ***pounds*** the grain into feed. The hammers are ***hinged***—if they strike a foreign substance, such as a stone, no damage is done.

Rowell "Whip-It" is automatic in operation; light running (New Departure ball bearings); meets every requirement of the small motor grinder, as specified by the University of Wisconsin.

Run it from your power line—no engine or tractor to bother with. Your electric switch controls it.

Write for descriptive folder and low prices that will surprise you.

The I. B. Rowell Company

Waukesha, Wis.
1316 Lincoln Ave.

ROWELL
Hammer Mills

Sparks and Chaff

Some Baby!

The farmers in a western agricultural section, blessed with plenty of good trout streams, have vied with each other on the size of fish they have caught. In fact, the rivalry has grown so keen that each winter the various farmers spend most of their "time off" fishing.

Despite the expensive tackle, and expensive bait, used by the most enthusiastic of the farmers, one of them who employs only a willow pole and a plain hook with bait, had consistently carried off first honors season after season.

Recently a baby was born in the household of one of the farmers and the happy father wanted to find out how much his off-spring weighed and thereupon appealed to the prize winning fisherman for the use of his scales on which he weighed his record fishes.

The baby tipped the scales at 35 pounds.

* * *

Ma Has Her Say

The coal-oil light's burning bright.
(It will, sometimes, when it feels right).
Pa sets there reading, slick as sin
The latest poultry bulletin.
Then, half to Ma and half to me
Pa ups and speaks, "I see," says he,
"As how correct illumination
Will make hens lay like all creation.
I've thought it out; the help's all hired;
I guess I'll have the henhouse wired."
Ma stoops and peers and sews away
Does Ma, and then I hear her say
"I wisht I was a blamed old hen;
Maybe they'd wire the homestead then!"

—*Submitted by R. E. Pierce.*

The Greatest Water Power Known to Man is a Woman's Tears.

* * *

She: You must be very fond of automobiles?

He: What makes you think so?

She: I heard you have a truck farm.

* * *

Just an Old-Fashioned Woman

Electrical Store Clerk—But Madam, what is your objection to using an electrical flat-iron?

Woman Customer—You can throw it only the length of the cord.—*Judge.*

* * *

Paradise Regained

The curse of Adam, some believe,
Was lighter than the curse of Eve,
Since Adam suffered from his fall
A very little, if at all;
He only had to turn his hand,
At first, to cultivating land,
Then rid himself of all such fetters
And merely had to dictate letters,
While poor Eve's work was never through—
She had a thousand things to do,
All incident to keeping house
And comforting her lazy spouse.
That may be right, it may be wrong,
But Eve did not endure it long.
To toil she shortly bid defiance
And organized Domestic Science,
With fireless cookers, percolators,
Electrical refrigerators,
Machines as fast as she could buy them
To wash the dishes and to dry them,
To get the laundry out on Monday,
To clean the carpet with on Sunday,
To make the coffee, toast the rolls,
To mend the rips and darn the holes.
She used to work from sun to sun,
But now she's through by half-past one.
And flits about in giddy raiment,
While Adam makes another payment.

—*S. K., in Spokane Spokesman-Review.*